

THAT WHICH IS CLAIMED IS:

1. An unsupported polymeric liner for a tubular container comprising, in order:
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a first sealant layer;

a second adhesive layer;

10 a third polyamide layer;

a fourth adhesive layer;

a fifth layer comprising an ethylene/vinyl alcohol copolymer;
15 a sixth adhesive layer;

a seventh polyamide layer;

20 an eighth adhesive layer;

a ninth high density polyethylene layer; and

a tenth high density polyethylene layer.
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2. An unsupported polymeric liner for a tubular container in accordance with Claim 1, wherein the first sealant layer is comprised of an ionomer resin.
3. An unsupported polymeric liner for a tubular container in accordance with
30 Claim 1, wherein the first sealant layer is comprised of ethylene/methacrylic acid copolymer partially neutralized with zinc or sodium ions.

4. An unsupported polymeric liner for a tubular container in accordance with Claim 1, wherein the first sealant layer is comprised of a high density polyethylene.
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5. An unsupported polymeric liner for a tubular container in accordance with Claim 1, wherein the third and seventh polyamide layers are comprised of nylon.
6. An unsupported polymeric liner for a tubular container in accordance with
- 10 Claim 1, wherein the polymeric liner is produced via blown film coextrusion.
7. An unsupported polymeric liner for a tubular container in accordance with Claim 1, wherein the polymeric liner is produced via die cast coextrusion.
- 15 8. A method for producing a lined tubular composite container comprising the steps of:
- advancing an unsupported multilayer polymeric liner ply from a liner supply roll toward a mandrel, wherein the liner ply includes, in order, a
- 20 first sealant layer, a second adhesive layer, a third polyamide layer, a fourth layer comprising an ethylene/vinyl alcohol copolymer, a fifth polyamide layer, a sixth adhesive layer, a seventh high density polyethylene layer and an eighth high density polyethylene layer;
- 25 winding the liner ply about the mandrel in partially overlapping fashion, such that the first sealant layer on one edge of the liner ply contacts the high density polyethylene layer of an opposite edge of the liner ply and is sealed thereto so as to form a wound liner tube; and

winding at least one paperboard body ply about the mandrel, and adhering an inner surface of the at least one paperboard body ply to the liner ply so as to form a lined tubular composite container.

- 5 9. A method for producing a lined tubular container in accordance with Claim 8,

 wherein the liner ply is wound about the mandrel and sealed together to form a wound liner tube prior to the step of winding the at least one paperboard
10 ply about the mandrel.

10. A method for producing a lined tubular container in accordance with Claim 8,

15 wherein the first sealant layer of the liner ply is heat-activatable, and further comprising the step of heating at least the edges of the liner ply to seal the edges together.

11. A method for producing a lined tubular container in accordance with
20 Claim 8,

 wherein the first sealant layer of the liner ply is comprised of ethylene/methacrylic acid copolymer partially neutralized with zinc or sodium
 ions.

- 25 12. A method for producing a lined tubular container in accordance with Claim 8,

 wherein the first sealant layer of the liner ply is comprised of high density
30 polyethylene.

13. A method for producing a lined tubular container in accordance with Claim 8,

wherein the third and fifth polyamide layers are comprised of nylon.

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14. A method for producing a lined tubular container in accordance with Claim 8, further comprising:

an alternate adhesive layer positioned between the third polyamide layer
10 and the fourth layer comprising an ethylene/vinyl alcohol copolymer.

15. A method for producing a lined tubular container in accordance with Claim 8, further comprising:

15 an alternate adhesive layer positioned between the fourth layer comprising an ethylene/vinyl alcohol copolymer and the fifth polyamide layer.

16. A composite container having a co-extruded polymer liner comprising:

20 a liner ply, comprised of, in order, a first sealant layer, a second adhesive layer, a third polyamide layer, a fourth layer comprising an ethylene/vinyl alcohol copolymer, a fifth polyamide layer, a sixth adhesive layer, a seventh high density polyethylene layer and an eighth high density polyethylene layer; and

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at least one paperboard body ply;

wherein the liner ply is wound about a mandrel in a partially overlapping fashion, such that the first sealant layer on one edge of the liner ply
30 contacts the high density polyethylene layer of an opposite edge of the liner ply and is sealed thereto so as to form a wound liner tube; and

wherein the at least one paperboard body ply is wound about the mandrel,
and adhered at an inner surface of the at least one paperboard body ply to
the liner ply so as to form a lined tubular composite container.

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17. A composite container in accordance with Claim 16, wherein the first
sealant layer of the liner ply is comprised of an ionomer resin.

18. A composite container in accordance with Claim 16, wherein the first
10 sealant layer of the liner ply is comprised of ethylene/methacrylic acid copolymer
partially neutralized with zinc or sodium ions.

19. A composite container in accordance with Claim 16, wherein the first
sealant layer of the liner ply is comprised of a high density polyethylene.

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20. A composite container in accordance with Claim 16, wherein the third and
fifth polyamide layers are comprised of nylon.

21. A composite container in accordance with Claim 16, wherein the liner ply
20 is produced via blown film coextrusion.

22. A composite container in accordance with Claim 16, wherein the liner ply
is produced via die cast coextrusion.